

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a seal assembly for sealing with a rotatable component extending within
5 the seal assembly and defining a longitudinal axis of rotation, the seal assembly comprising a seal element retained by a seal housing, wherein one of the seal element and the seal housing is comprised of a compressible material, wherein the seal element is comprised of a seal engagement surface, and wherein the seal housing is comprised of a housing engagement surface for engaging the seal engagement surface, the improvement
10 comprising one of the seal engagement surface and the housing engagement surface being comprised of the compressible material and the other of the seal engagement surface and the housing engagement surface being oriented in a plane normal to the longitudinal axis of rotation of the component extending within the seal assembly and defining a depression for providing an isolated gap between the seal engagement surface and the housing
15 engagement surface for receiving the compressible material to restrain movement of the seal element relative to the seal housing.
2. The improvement as claimed in claim 1 wherein the depression is
20 comprised of at least one circumferential groove.
3. The improvement as claimed in claim 1 wherein the depression is
25 comprised of at least one circumferential groove extending for a length equal to the circumference of the other of the seal engagement surface and the housing engagement surface.
4. The improvement as claimed in claim 1 wherein the depression is
30 comprised of a plurality of substantially parallel circumferential grooves.
5. The improvement as claimed in claim 1 wherein the depression is
30 comprised of a plurality of substantially parallel and concentric circumferential grooves.

6. The improvement as claimed in claim 1 wherein the depression is comprised of a plurality of substantially parallel and concentric circumferential grooves, wherein each of the grooves extends for a length equal to the circumference of the other of the seal engagement surface and the housing engagement surface.

7. The improvement as claimed in claim 1, further comprising a preloading mechanism for urging the seal engagement surface and the housing engagement surface into engagement with each other.

8. The improvement as claimed in claim 7 wherein the preloading mechanism is comprised of at least one spring which is retained by the seal housing.

9. The improvement as claimed in claim 1 wherein the seal element is comprised of a compressible material and wherein the depression is defined by the housing engagement surface.

10. The improvement as claimed in claim 9 wherein the seal element is comprised of a resilient compressible material.

11. The improvement as claimed in claim 9 wherein the depression is comprised of at least one circumferential groove.

12. The improvement as claimed in claim 9 wherein the depression is comprised of at least one circumferential groove extending for a length equal to the circumference of the housing engagement surface.

13. The improvement as claimed in claim 9 wherein the depression is comprised of a plurality of substantially parallel circumferential grooves.

14. The improvement as claimed in claim 9 wherein the depression is comprised of a plurality of substantially parallel and concentric circumferential grooves.

15. The improvement as claimed in claim 9 wherein the depression is
5 comprised of a plurality of substantially parallel and concentric circumferential grooves, wherein each of the grooves extends for a length equal to the circumference of the housing engagement surface.

16. The improvement as claimed in claim 9, further comprising a preloading
10 mechanism for urging the seal engagement surface and the housing engagement surface into engagement with each other.

17. The improvement as claimed in claim 16 wherein the preloading
15 mechanism is comprised of at least one spring which is retained by the seal housing.